REMARKS

Attached hereto is a Request for an Extension of Time and the appropriate fee.

The present invention is directed to improving the molding of appendages for an elastic doll, which includes a flexible metal core to permit the doll appendages to be subjectively positioned to improve the lifelike characteristics for the child playing with the doll. To insure that the metal core 10 shown in Figures 1A and 1B is appropriately positioned within the mold, as shown in Figure 3, a spacer 13 which can include a plurality of taper projections 15 as shown in Figure 2, can be utilized to position the metal core at the appropriate position within the mold cavity.

As noted on page 11, lines 20-31, the spacer is made of a synthetic resin material having a melting point equal to or below the molding temperature of a molding material. The spacer 13 can further be made of the same material as the molding material so that the resultant finished doll appendage will avoid any problems of the prior art use of pins that were previously used to support the core material. The present invention has the spacer, in essence, melt and meld into the molding material of the arm while leaving the metal core at the desired central position in the mold cavity. The problems of a pin rupturing through the doll's skin that can provide a safety hazard and can further mar the appearance of the appendage is removed by the present invention.

The present invention further provides a supporting rod at a site in the molding space corresponding to an engagement groove that is adapted to engage with the trunk of the doll. The supporting rod is positioned within the mold cavity to support the metal core member against the injection pressure of the molding material during the molding of the arm. As seen in Figures 6 and 7 of the present invention, a supporting rod 24 is positioned to contact and support the core member 10 so that the injection pressure of the molding material is applied directly to the section

of the cores corresponding to the shoulder of each arm. As can be seen in Figure 7, supporting rod 24 can be positioned in the molding site 23 that corresponds to an engagement groove of the shoulder for each of the arms. After molding, the support rod can be drawn out, and since its location is in the engagement groove, the hole will not be seen when the appendage is appropriately assembled into the trunk of the doll.

These features are set forth in the presently pending claims and are neither taught nor rendered obvious by any combination of the references of record.

The Office Action contended that U.S. Patent No. 4,470,784 could be combined with the Japanese Laid-open Application No. 62-071616 to render obvious each of the outstanding method claims of the present invention under 35 U.S.C. § 103. The Office Action contended that the '784 disclosure basically taught the present invention while the Japanese Laid-open Application was relied upon for a teaching of a method of molding a doll's arm with a pair of molding spaces. Applicant respectfully traverses this interpretation.

The '784 patent recognizes the problems of having pins hold "an armature" within the mold in its discussion of the background art. To resolve this problem, the '784 patent teaches a particular type of insert for supporting an armature having a collapsible pin assembly mounted within a cylindrical housing with a piston and a valve so that the support points of the pin will be collapsed into the cylinder cavity by the pressure of the molding material. Thus, the pins are retracted or collapsed away from the inner surface of the mold when the mold is filled to capacity so that the pins are recessed sufficiently below the surface of the material to eliminate the problems of poor appearance and pin ruptures of the doll surface. This teaching is easily seen in Figure 9 showing the pins contacting the internal surface of a mold before the injection of

the material while Figure 11 shows the pins being retracted under the pressure of the injected material as follows:

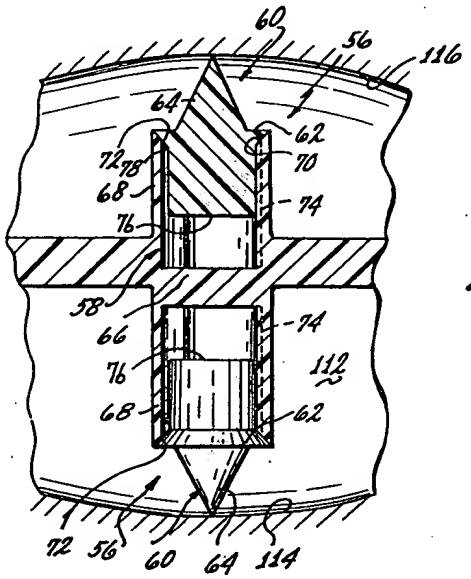
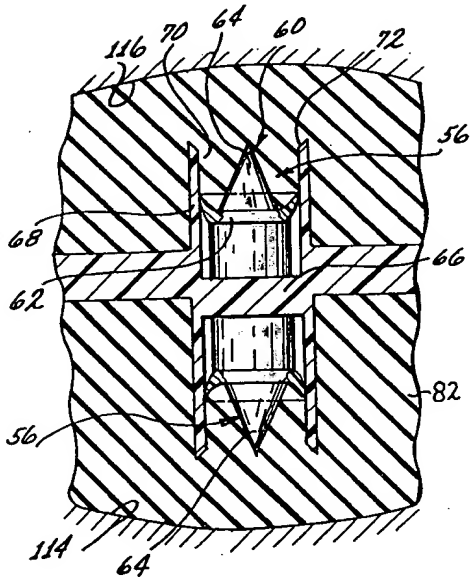


Fig. 11

Fig. 9



2. Background Art

The prior art, U.S. Pat. No. 3,277,601, provides an insert-molding method wherein a product may be made by first injection-molding fairly rigid skeletal parts in a first mold. These parts, which include a plurality of pins, are articulately connected together to form an "armature". This armature is then positioned in a second mold with the pins touching the inner surface of the mold to maintain the armature in proper position while a fairly soft polyvinylchloride (PVC) material (or the like) is forced into the second mold to encase the armature. This soft material just barely covers the tips of the pins and is sometimes ruptured by the pins. Additionally, the pins often show through the soft skin giving the product a poor appearance.

DISCLOSURE OF THE INVENTION

According to the method and apparatus of the present invention, the pins are retracted or collapsed away from the inner surface of the second mold as soon as the second mold is

substantially filled to capacity. This results in a finished product having the pins recessed sufficiently below the surface of the material encasing the armature to eliminate the problems of pin ruptures and poor appearance.

The Japanese Laid-open Patent Application 62-071616 discloses a method of molding a doll arm or leg, wherein a skin layer 2 is formed from a soft polyvinyl chloride resin by slush molding so as to be hollow, then a flexible core member 6 is disposed within the interior of the hollow skin layer 2 in the mold 5, thereafter a foamed resin layer 3 is formed. However, the arrangement of the core member 6 is not described in detail. Please refer to the following partial translation:

[Page 2, upper right column line 7 to lower left column, line 12]

(Embodiment)

An embodiment of the present invention will be described hereinafter with reference to the drawings.

In Fig. 1, reference character A designates a molded article formed by the method of molding an arm for a doll made of synthetic resin according to the present invention. The molded article A is formed to be a doll arm 1.

Each step in the method of molding the molded article A is carried out as shown in Figs. 2(a) to 2(e).

Firstly, as shown in Figs. 2(a) and 2(b), a soft polyvinyl chloride resin as a molding material is filled in recessed surfaces 5a of mold 5 and the molding material is slush molded to be adhered to the recessed surfaces 5a, to thereby form an outer skin layer 2 having a thin wall.

Next, as shown in Figs. 2(c) and 2(d), a flexible core member 6 is disposed within the thus formed outer skin layer 2 in the mold 5, and then a synthetic resin material mixed therein with an expanding agent is injected into the mold 5, whereby the synthetic resin material is foamed to form a foamed resin layer 3. Thereafter, the thus produced article is removed from the mold 5, resulting in a doll arm 1 shown in Fig. 2(e) being obtained.

In this connection, the flexible core member 6 may be made of a coiled metal wire. The method for molding the doll arm 1 is not limited to slush molding. Instead, it may be molded by another molding method, such as rotational molding or the like.

The Japanese Laid-open Application does not address the problems of support pins arranged adjacent the surface of the molded appendage nor does it address the issues of providing a support rod at a site in a molding space corresponding to an engagement groove. It teaches molding a hollow doll arm having a flexible core member positioned within it and subsequently a foaming agent is ejected into the hollow cavity of the appendage.

The claims have been amended to address the 35 U.S.C. § 112 issues. Claims 5 and 6 further define an injection step at a molding temperature for melting the spacer, the spacer being made of a synthetic resin material that is compatible with the molding material. Neither of the two cited references teach or suggest such features.

Claim 7 further defines molding spaces having mating surfaces to capture and hold the core at both ends to maintain a position of the core within the molding spaces apart from the mold surfaces so that the core will float within the molding space. Neither one of the cited references teach this particular feature.

Finally, Claim 8 defines the feature of a support rod in an engagement groove for supporting the metal core against the injection pressure of the molding material. By providing the supporting rod in the engagement rod, not only is the core appropriately supported, but the resulting hole when the support rod is removed is not seen in the assembled doll. These features are not taught by any of the cited references.

In summary, the cited references do not teach nor suggest the present invention as defined in the presently pending claims.

It is believed that the case is now in condition for allowance, and an early notification of the same is requested.

If the Examiner believes that a telephone interview will help further the prosecution of this case, he is respectfully requested to contact the undersigned attorney at the listed telephone number.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231 on April 28, 2003.

By: James Lee

Signature

Dated: April 28, 2003

Very truly yours,

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